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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,394	07/03/2003	Hironori Endo	Q76423	3189

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EXAMINER	
HUFFMAN, JULIAN D	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 09/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/612,394	ENDO, HIRONORI	
	Examiner	Art Unit	
	Julian D. Huffman	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3 and 5-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,14-16 and 19* is/are rejected.

7)☒ Claim(s) *5-13,17 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 14-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki (2002/0070991 A1) in view of Otsuki et al. (2002/0070994 A1).

Otsuki ('991) discloses:

With regards to claim 1, a liquid ejection control method for controlling ejection of liquid from nozzles arranged in a predetermined feed direction, the nozzles for ejecting liquid onto a medium that is fed in said feed direction, comprising the following steps:

a step of making a nozzle located most upstream in said feed direction, and nozzles within a predetermined distance in the feed direction from the most downstream nozzle, not eject liquid (fig. 16, nozzles 3-8 do not eject liquid and are in an upstream side, section 0156);

said predetermined distance is increased in said step of ejecting liquid onto said medium in correspondence with an increase of an aggregate paper feed amount of said medium (during an intermediate routine, all nozzles eject ink, during the lower edge routine, after the medium is fed a predetermined amount, only nozzles 1 and 2 eject ink,

after a final paper feed, all nozzles are disabled since printing is completed, thus as paper is fed, more nozzles are disabled to prevent printing on the platen).

With regards to claim 3, after the medium is initially positioned under the nozzles, that a step of feeding said medium in said feed direction and a step of moving an ejection head provided with said plurality of nozzles and ejecting liquid onto said medium are repeated a predetermined number of times, and then ejection of liquid onto said medium is ended (fig. 13).

With regards to claim 14, said predetermined distance is increased in correspondence with an increase of an aggregate paper feed amount of said medium to increase a number of said nozzles that are made not to eject said liquid (during an intermediate routine, all nozzles eject ink, during the lower edge routine, after the medium is fed a predetermined amount, only nozzles 1 and 2 eject ink, after a final paper feed, all nozzles are disabled since printing is completed, thus as paper is fed, more nozzles are disabled to prevent printing on the platen), and

wherein, if the number of said nozzles that are made not to eject said liquid exceeds a number of predetermined nozzles among said plurality of nozzles, then the operation for ejecting liquid onto said medium is ended (when all nozzles are not ejecting ink, the printing operation has ended).

With regards to claim 15, Otsuki discloses that when it is determined that said portion of said medium on the upstream side in said feed direction has passed a predetermined position in said feed direction, liquid is not ejected from nozzles other

than said predetermined nozzles among said plurality of nozzles (fig. 16, liquid is not ejected from lower numbered nozzles to prevent staining of platen).

With regards to claim 16, the predetermined nozzles are in opposition to a recessed section of a medium support section that is provided with said recessed section and that is for supporting said medium (fig. 16, slot 26f).

With regards to claim 19, Otsuki discloses a liquid ejection apparatus for ejecting liquid onto a medium, comprising:

a plurality of nozzles arranged in a predetermined feed direction for ejecting the liquid (fig. 16, nozzles 1-8);

a movable ejection head provided with said plurality of nozzles (28); and

a feed mechanism for feeding the medium in said feed direction (25);

a controller (fig. 6, element 41) which:

makes nozzles which are located most upstream in said feed direction and nozzles that are a predetermined distance in said feed direction from said most upstream nozzles not eject liquid therefrom (fig. 16), and

increases said predetermined distance in correspondence with an increase of an aggregate paper feed amount of said medium after said portion of said medium is initially positioned under the nozzles (during an intermediate routine, all nozzles eject ink, during the lower edge routine, after the medium is fed a predetermined amount, only nozzles 1 and 2 eject ink, thus as paper is fed, more nozzles are disabled to prevent printing on the platen).

Otsuki uses a sub-scanning motor encoder and a main scanning carriage encoder (fig. 6) to determine position of the media.

Otsuki does not disclose a sensor for detecting the media.

Otsuki et al. ('994) discloses a sensor for detecting the media edge and controlling printing based on the result of detection (fig. 6, element 33).

It would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the sensor of Otsuki et al. into the device of Otsuki for the purpose of allowing images to be printed at exact positions in front or behind the rear edge of the medium (sections 0016 and 0017).

Response to Arguments

3. Applicant's argument that figs. 16 and 40 of Otsuki '991 are directed towards different embodiments is noted, however, in referring to a comparison of figs. 16 and 40, the examiner merely attempted to point out the differences in the various embodiments. Fig. 16 depicts a lower edge routine wherein only nozzles 1 and 2 eject ink. This is due to a much larger paper feed amount. Only nozzles 1 and 2 eject ink since, if nozzles 3-8 ejected, they would deposit ink on the platen. In the intermediate routine, all of the nozzles would eject ink. Further, after a final feed of the paper, printing is completed and all nozzles are disabled. Thus, it is seen that the number of nozzles disabled is increased with the paper feed amount. This is contrasted with the embodiment of fig. 40 wherein the print medium is located over the platen, and all nozzles eject ink.

Allowable Subject Matter

4. Claims 5-13, 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571) 272-2147. The examiner can normally be reached on 9:30a.m.-6:00p.m. Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Julian D. Huffman
8 September 2005

K. FEGGINS
PRIMARY EXAMINER
9/05